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AUTHOR Reed, Carol Niman
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ABSTRACT

This practicum report describes the development and implementation of a course focused on development of problem-solving skills within a master's program in occupational therapy in pediatrics. The 12-week course was designed to teach students the use of appropriate occupational therapy intervention strategies through the use of case studies and problem-based learning methods. The course included a didactic portion and a clinical fieldwork portion. Structured laboratory experiences occurred weekly. The 12 students in the course determined and directed some of their own learning and laboratory experiences and participated in self-assessment and peer review. Following the course, evaluation data revealed that the students felt more comfortable treating children and youth and were confident in their ability to plan appropriate therapy interventions. They were able to locate the necessary resources needed to meet the unique needs of each patient and could apply problem-solving skills to determine solutions to patient problems with more ease. Students, faculty, and clinical supervisors reported that students were more self-directed in their learning. A faculty, peer, and self-assessment form is appended. (Contains 34 references.) (DB)

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ED 401 667

Improving the Ability of Master's Level Occupational Therapy Students to Strategically Problem Solve When Providing Services to Children and Youth

by
Carol Niman Reed
Cluster 70

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A Practicum I Report Presented to
the Ed.D. Program in Child and Youth Studies
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

Nova Southeastern University
1996

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APPROVAL PAGE

This practicum took place as described.

Suze Dudley

Verifier: Suze Dudley

Director, Occupational Therapy Program
Title

Fort Lauderdale, Florida
Address

March 8, 1996
Date

This practicum report was submitted by Carol Niman Reed under the direction of the advisor listed below. It was submitted to the Ed. D. Program in Child and Youth Studies and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

Approved:

March 11, 1996
Date of Final Approval of Report

Mary W. Staggs, Ed.D.
Mary Staggs, Ed. D., Advisor

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Abstract

Improving the Ability of Master's Level Occupational Therapy Students to Strategically Problem Solve When Providing Services to Children and Youth. Reed, Carol Niman, 1996: Practicum Report, Nova Southeastern University, Ed.D. Program in Child and Youth Studies. Occupational Therapy/Professional Education/Problem Solving/Problem Based Learning/Clinical Reasoning/Case Studies.

This practicum was designed to improve the ability of master's level occupational therapy students to work with children and youth by increasing their use of problem solving skills and clinical reasoning. A 12 week course was designed to teach students to treat children and youth using appropriate occupational therapy intervention strategies through the use of case studies and problem-based learning methods. Limited lectures were given, but structured laboratory experiences occurred weekly. Students determined and directed some of their own learning and laboratory experiences. The course included a didactic portion and a clinical fieldwork portion.

The 12 students in the course entitled "Occupational Therapy Practice in Pediatrics" were assigned to two clinical sites during the 3 month period, and they were evaluated by the clinical supervisors as well as by two pediatric ocuupational therapy faculty members. Students participated in self assessment and peer review.

Analysis of the data revealed that occupational therapy students reported that they felt more comfortable treating children and youth and were confident in their ability to plan appropriate therapy interventions. They were able to locate and find the necessary resources needed to meet the unique needs of each patient and they could problem solve to determine solutions to patient problems with more ease. Students, faculty and clinical supervisors reported that students were more self-directed in their learning.

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Chapter I: Introduction

Description of Community

The community is a large, rapidly expanding metropolitan area. There are more than one million people residing in the county which covers 1,211 square miles. Five colleges or universities serve the county as well as one junior or community college and three vocational-technical schools. There are more than 20 hospitals, 25 libraries and 300 schools. The population in the immediate surrounding counties is greater than 3 million.

The socioeconomic level of the community is widely variable with people on both ends of the spectrum. The population is culturally diverse and there is a high percentage of people in the area who are Spanish speaking.

The university where this writer is employed currently has five locations with the main campus located on more than 200 acres of land. Two of the other campuses are located on 10 acres apiece and are several miles from the main campus. The fourth university site is in a neighboring county and will be sold in 1996 when the Health Professions Division of the university moves to new facilities on the main campus. The university also owns and operates a community health care service in a low socio-economic area of the county. The university is among the largest employers in the state with annual revenues of $135 million.

Description of Work Setting

The university is one of the fifty largest private universities in the United States

and the second largest independent university in the state. It is continuing to expand rapidly in numbers of students and in program offerings. The university is known for its innovative approach to education and has the largest graduate school of education in the country. The mission statement for the university states that the university encourages creativity and innovation when possible in educational activities.

The university offers courses of study leading to the baccalaureate, master's and doctoral degree. It also provides instruction from preschool through high school plus continuing education and nondegree certificate programs. In addition to programs offered on campus, field-based programs are located in 29 other cities within the state and 21 cities in other states. The university has sites in Canada, Jamaica, Panama and the Bahamas.

More than 13,300 students are enrolled at the various university locations and there are over 1,800 employees. The average age of students is 36 years. The university employs more than 600 instructional and research full-time and adjunct faculty. Graduates of the university reside in all 50 states and 26 foreign countries and are in excess of 36,000.

The university has a Health Professions Division which includes the only college of optometry in the state, the only college of pharmacy in the area and the only college of osteopathic medicine in the southeastern United States. The School of Allied Health is under the Health Professions Division and includes programs in occupational therapy, physical therapy, physicians' assistant, and pubic health. All four programs are responsible to the Dean of Allied Health.

This writer works in the newly established, master's level occupational therapy program within the university. There are currently 114 students, fourteen faculty members, and numerous clinical fieldwork supervisors involved in this program which is beginning its second year. The charter class will graduate in 1997 with 45 students. The second class which started in June 1995 has 68 students. The average age of students in the occupational therapy program is 28 years and students come from a variety of backgrounds and cultures.

Besides the master's level students, there are two students enrolled in the clinical doctoral program in occupational therapy. This was the first university to offer a clinical doctorate in occupational therapy and is currently one of two programs offering the degree in the world.

Writer's Role

This writer is a senior member of the faculty and responsible for the pediatric portions of the curriculum which includes designing and structuring both classroom and clinical experiences for students in the master's level program. One additional faculty member has recently been added to assist in teaching pediatrics courses. It is anticipated that one or two more faculty members with specialization in pediatrics will be recruited and hired in the next year. One person has been hired by the department to do clinical practice and clinical instruction in pediatric occupational therapy within the university clinics.

The clinical occupational therapy service in pediatrics is connected to the academic program and is being established to support student learning and research.

There are three locations within the university system where children are currently receiving occupational therapy services. There are two outpatient clinics (one on the Health Professions Division campus and one at the community health care location) and one preschool/elementary school which is located on the main campus. The outpatient clinics serve children with a large variety of problems and are administratively under the Osteopathic Medicine training program. The preschool primarily serves children with autism and the elementary school is for children with learning disabilities. Since the occupational therapy course in pediatrics is structured to include both didactic learning experiences and clinical practice, the students participate in activities at these as well as other clinical sites.

This writer was the primary person responsible for developing the treatment course in the practice of occupational therapy in pediatrics for the master's program. Using new and innovative teaching methods was encouraged by the program director for the format and structure of the course. The course was designed to be taught by a team of two instructors and various clinical supervisors.

Although this writer was responsible to the Director of the Occupational Therapy Program, it was possible to function independently in designing and structuring the course. The course was approved in 1996 by the curriculum committee of the Program in Occupational Therapy.

Chapter II: Study of the Problem

Problem Statement

The problem to be solved in this practicum was that master's level occupational therapy students demonstrated dependence upon their professors and clinical instructors to provide them with solutions for problems they encountered when working with children and youth.

Problem Description

Because the field of occupational therapy is expanding so rapidly, occupational therapy students have difficulty acquiring and integrating the vast amount of information needed to work with children and youth as it is provided in traditional pediatric courses. Students taught in the conventional manner are not encouraged to solve problems by seeking knowledge independently and have problems relating information learned in classes to clinical practice.

Problem Documentation

A clinical advisory committee of local occupational therapists was established to assist in the development of new courses and to give feedback to the faculty. During the first clinical advisory meeting in March 1995, 4 out of 5 clinical supervisors reported that occupational therapy students who come to their clinics for fieldwork experiences have a difficult time integrating and using information learned in class when asked to plan and implement treatment for children and youth. Five out of 5 of the clinical supervisors at a clinical advisory meeting in March 1995, reported that OT students lack the problem solving ability that is necessary to treat each child and youth according to their unique

needs.

Before accepting the position at this university, this writer was employed by another university to teach pediatrics in the occupational therapy program. Feedback from evaluations of the pediatric course taught by this writer in May 1994, indicated that 25 out of 32 OT students thought there was too much information given in class. They also reported that they were unable to integrate the information needed to apply it to clinical practice. Ten out of 12 occupational therapy students reported during a group interview in May 1994, that they did not feel confident in their knowledge and skills when asked to identify and use appropriate strategies when working with children and youth in a clinical setting.

Causative Analysis

The information explosion has made it impossible for instructors or students to teach or learn all of the important material available in the area of pediatric occupational therapy. Occupational therapy treatment courses have historically emphasized the learning of facts, skills and techniques rather than emphasizing the problem-solving abilities that are needed to help students become lifelong learners. Students have not been encouraged to learn independently, and rarely are independent studies or self-directed learning courses included in the OT curriculum. Learning has been teacher centered instead of student centered.

Many individual courses are taught in occupational therapy curricula over a 2-4 year period. It is often difficult for occupational therapy students to remember and use the information learned throughout this period. They have reported difficulty relating the

facts learned in various classes to their clinical practice. This is partly because problems faced by clients require solutions that are unique to that situation and do not follow the textbook example.

Emphasis in courses has not been on helping students' integrate new knowledge with previously learned information. Students are often asked to memorize facts in order to pass objective tests and they report that these facts are quickly forgotten. Integration of materials has been left to the student and this integration often does not occur until the student is involved in their clinical placements following the completion of all course work. There has traditionally been very limited supervised clinical experience during course work where knowledge and skills can be integrated as an integral part of the course.

Relationship of the Problem to the Literature

The emphasis in the conventional approach to education is the use of lecture and other teacher-centered learning methods. These may not be the most effective way to educate health care practitioners. For the purpose of this practicum, conventional instruction is that which is "marked by instructor-provided learning objectives and assignments, large-group lectures, structured laboratory experiences, and periodic multiple-choice tests of achievement" (Albanese & Mitchell, 1993, p. 54).

Students taught by conventional instructional methods learn to fulfill requirements for passing courses by reporting factual material only, not using higher level thinking skills according to Newble & Clarke (1986). This lack of teaching higher level thinking skills is true in occupational therapy as well. Cohn (1991) states that in

occupational therapy the "academic programs do not adequately prepare students for the uncertainties inherent in the challenges of practice" (p. 969).

Conventional, educational approaches are questioned because,

> "The world we live in demands self-starting, self-directing citizens capable of independent action. The world is changing so fast we cannot hope to teach each person what he/she will need to know in twenty years. Our only hope to meet the demands of the future is the production of intelligent, independent people" (Combs, 1972, p.59).

The literature documents this problem with evidence. Barrows (1994) reports that in traditional lecture classes, only about 20% of the information taught is retained. With the rapid increase in scientific knowledge, information taught in traditional occupational therapy courses today is irrelevant in a very short period of time (Sadlo, Piper, & Agnew, 1994). This means that students need to have more effective ways of finding information and acquiring knowledge over time.

These problems with conventional education are the result of various causes. Newble & Clarke (1986) feel that students are often motivated only by concern for grades or by a fear of failing and not by a desire to learn and to retain and use knowledge. This information is quickly forgotten. Also, tasks that are required of students in their course work often do not bear the faintest resemblance to the activities they will need to engage in when working in their chosen field (Sternberg, 1990). This makes it difficult for students to give meaning to the activities often expected of them. Donald Schon (1987) writes that therapists need to be reflective practitioners and that in order to be so they must learn clinical reasoning skills. The clinical reasoning process which underlies practice is often not emphasized in occupational therapy education (Mattingly &

Fleming, 1994). Barrows (1985) contends that knowledge is often forgotten because it is structured in ways not useful in the clinic and not around symptoms, signs, or course of illness. Fieldwork and clinical experiences where students are exposed to the real problems in occupational therapy are usually very limited and not available until after all didactic classes are completed (Bruhn, 1992).

Chapter III: Anticipated Outcome and Evaluations Instruments

Goals and Expectations

The goal of this practicum was that students completing the pediatric occupational therapy treatment course would demonstrate appropriate strategies needed to solve the problems of children and youth encountered in clinical practice today as well as in the rapidly changing health care environment.

Expected Outcomes

The following outcomes were projected for this practicum:

1.) Occupational therapy students will appropriately locate resources and use necessary information to treat children and youth with a variety of disabilities in the clinical settings as determined by the pediatric faculty and clinical supervisor,

2.) Occupational therapy students will be able to determine each child's unique problems and use this information to develop and implement appropriate solutions or strategies for treatment as determined by the pediatric faculty and clinical supervisor,

3.) Occupational therapy students will assist in determining their own learning needs and will develop strategies to meet those needs during the therapeutic treatment course as determined by self assessment, peer assessment and pediatric faculty assessment,

4.) Occupational therapy students will express an adequate level of confidence when treating children and youth following the pediatric

treatment course as determined by self evaluation and self report, and

5.) Occupational therapy students will pass the midterm and final examinations as determined by the pediatric faculty and by student self-assessment.

Measurements of Outcomes

Student evaluations were completed at the end of the 3-month "Occupational Therapy Practice in Pediatrics" course and included several assessments of each student's ability. These assessments were done by the pediatric faculty, the clinical fieldwork supervisors, the students themselves and by the students' peers. The midterm and final examinations were designed to evaluate how well the students' were able to problem solve, locate and acquire necessary information and use their knowledge and skill to effectively plan therapy programs for children and youth.

The measurement tool used by the clinical fieldwork supervisors was the Wiscouncil Level I Fieldwork Evaluation Form (Brown, 1989). The Wiscouncil Level I Fieldwork Evaluation was developed in 1989 by a task force from six Wisconsin schools of occupational therapy because no uniform evaluation of Level I fieldwork was available (Brown, Streeter, Stoffel & McPherson, 1989). The tool is currently being used by numerous occupational therapy programs. The use of the same evaluation tool encourages some degree of consistency of measurement across programs.

The Wiscouncil Fieldwork Evaluation is divided into 5 major areas which are: interpersonal interactions, professional behavior, data gathering/observational skills, program planning/implementation, and verbal and written communication. This

evaluation is criterion-referenced and provides expectations for student behavior for each objective on the form. Each objective is scored on a six-point scale and the total points for each section are recorded. To obtain a final score the total points earned in each category are added and this number is divided by the number of items scored. This evaluation was completed and scored by the clinical supervisor for each student, but the grades were recorded on a pass-fail basis by the pediatric faculty members.

The Faculty, Peer and Self Assessment Form (Appendix A) was completed as part of the evaluation process. Each student completed a self assessment plus an assessment of six other students from the class who were randomly selected. Each faculty member also assessed each student using this form.

Students were expected to pass a midterm and a final examination prepared by pediatric faculty members. These examinations included case studies where the student was asked to define the problems, determine the resources needed to address the problems and find those resources in order to provide a child or teenager with an appropriate treatment program as defined by the patient, the patient's family and by the professionals involved.

Chapter IV: Solution Strategy

Statement of Problem

The problem to be solved in this practicum was that master's level occupational therapy students demonstrated dependence upon their professors and clinical instructors to provide them with solutions for problems they encountered when working with children and youth.

Discussion and Evaluation of Solutions

Master's level occupational therapy students are adult learners who need to develop independent problem-solving skills to effectively work with children and youth. A number of solutions have been gleaned from the literature on how to effectively work with adult learners, how to teach clinical reasoning skills and on how to encourage problem solving ability.

When addressing adult learning, Daines, Daines, and Graham (1993) write that,

> "People learn best when:
> -they feel secure and they can try out things in safety
> -their needs are being met in ways that they can see are relevant and appropriate
> -they know what they have to do, especially where they have been involved in setting their own goals
> -they are actively involved and engaged
> -they know how well they are doing
> -they see and experience that they are welcomed and respected both as adults and as individuals in their own rights" (p. 10).

One method of learning that is recommended for adults is learning by discovery or inquiry. In discovery learning, students actively participate in the process and often learn to organize learning around problems (Benor, 1984).

Engel (1991) writes that effective adult learning incorporates active learning through posing one's own questions and seeking the answers as well as by integrated learning, cumulative learning and learning for understanding. Adult learning is thought by Candy (1991) to generally continue throughout the life span in a self-directed manner rather than in conventional learning situations.

Donald Schon (1987) contends that the means or process by which a professional learns will ultimately determine the quality of the practitioner's work and that reflection and clinical reasoning are essential parts of the learning. The teaching of clinical reasoning skills to occupational therapy students is addressed by Mattingly and Fleming (1994) when they suggest that three types of reasoning must be taught. These are: procedural reasoning, interactive reasoning and conditional reasoning. Procedural reasoning is defined by Mattingly and Fleming (1994) as the type of reasoning used when thinking about the disability and determining the treatment activities or procedures. Interactive reasoning is employed when the therapist interacts with the patient and learns more about the how the patient feels, and conditional reasoning is used to place the patient in broader social and temporal contexts (Mattingly & Fleming, 1994).

Barrows and Tamblyn (1980) suggest that learning in a problem-based format will structure the knowledge so that students can better remember it and retrieve it for use in a clinical setting. Problem-based learning facilitates students' development of clinical reasoning skills, the structuring of knowledge for use in clinical practice, the development of effective self-learning skills and increased motivation for learning (Barrows, 1986).

For the purpose of this practicum, problem-based learning will be defined as,

> "Problem-based learning . . . enables students to direct their own learning by using a variety of resources for work-related problems, critical reasoning, managing and solving problems, and applying their knowledge to realistic problems they will encounter in professional practice" (Bruhn, 1992, p. 161).

The major objectives of problem-based learning are to acquire an integrated body of knowledge related to the problem and to develop problem-solving skills (Bruhn, 1992).

Barrows (1986) reports that case studies and patient simulations provide the structure for problem-based learning. "Students learn by confronting selected clinical problems which require them to acquire the relevant basic and clinical skills" (Newble & Clarke, 1986, p. 268). Bruhn (1992) feels that problem-based learning is particularly relevant in the allied health professions.

Curricula are structured in a variety of ways to enhance adult learning. Many programs are structured totally around problem-based learning. These involve different areas of practice, such as nursing, optometry, business and medicine (Foster & Gilbert, 1991; Love-Kitchin, 1991; Boud & Feletti, 1991; and Ryan & Little, 1991). There is evidence that individual courses can be effectively taught using problem-based learning within the confines of a more conventional curricular design (Armstrong ,1991; and Albanese & Mitchell, 1993).

VanLeit (1995) writes that occupational therapy students have successfully used problem-based learning methods by working in small groups with a tutor and by using case studies presented in a variety of ways. She writes that development of occupational therapy student skills in the areas of self-directed learning, clinical reasoning,

communication, self-evaluation and peer evaluation can be fostered through the use of problem-based courses (VanLeit, 1994).

According to Swanson, Case & Vleuten (1991) and Norman (1991) student assessment in problem-based learning should be based on problem solving ability and on how students are able to acquire and use knowledge which is pertinent to practice instead of on objective tests that require primarily memorization. Recommended methods of examination are the modified essay tests and case study evaluations.

Several authors (Barrows, 1992; Barrows, 1994; Engel, 1991; Love-Kitchin, 1991; MacDonald, 1991; Neame, 1981; Royeen, 1994; Royeen, 1995; Sadlo, Piper & Agnew, 1994; VanLeit, 1994; VanLeit, 1995) provide guidance in developing and structuring problem-based courses. VanLeit (1994, 1995) and Royeen (1994, 1995) address teaching occupational therapy students specifically.

Description of Selected Solutions

A course designed to teach master's level occupational therapy students how to strategically problem solve when providing services to children and youth was designed and taught by this writer. This course was structured to use a student-centered approach which incorporated some problem-based learning methods. Occupational therapy students were instrumental in planning and implementing several of the teaching experiences during the class and were expected to be active participants in the learning process. In the course case studies were used as a primary teaching tool in order to relate the class material more closely to what would be experienced in the clinic. The case studies were presented through the use of written materials, videotapes and actual

patient observation. The class included clinical experience and emphasized the development of procedural, interactive and conditional clinical reasoning skills. Students were involved with children with disabilities at a minimum of two fieldwork sites during the 3-month course.

Student evaluations were based on the students' ability to reason, to find and use appropriate resources and to problem solve rather than on memorization of facts. Opportunities for students to become more reflective in their practice were provided through the use of a journal.

Report of Action Taken

The following steps were taken. Twelve occupational therapy students were assigned to a 3-month pediatric practice course which included eight weeks of primarily classroom experience and four weeks of Level I Fieldwork in a local therapy clinic. Students spent 12 hours per week during the first eight weeks of the course with the pediatric instructor in classroom activities and 3 hours in a supervised clinical setting.

During the course, students used case histories developed by experts in the field of occupational therapy. The cases involved children from several different therapy environments and with a variety of disabilities in order to assist students in integrating information. Students were asked to define and to solve problems that are frequently encountered in clinical practice when working with children and youth.

The students spent three hours per week of the first eight weeks in a classroom for children with special needs and were supervised jointly by the pediatric faculty and the classroom teacher. Following the eight weeks of classroom work, the students spent

40 hours per week for the last four weeks of the course in an assigned clinical placement working with children. They were supervised jointly by the pediatric faculty and the clinical supervisor at the site. Each student spent 1-2 hours per week during the last four weeks in an electronic classroom with the other 11 students from the class and the pediatric faculty.

During the 3-month implementation period numerous activities took place. A different case study was presented each week and students were asked to determine their own learning needs based on the case. Students were divided into smaller groups as the need arose. There were always two faculty tutors available. Students presented the information and resources they found to the entire class each week and together the students discussed solutions to the problem or determined a treatment plan.

One lab was conducted each week to increase the skill level of the students in an area they or the faculty members designated. Students were informally evaluated weekly by the two pediatric faculty members on their case presentations and on their lab work. Each week during the initial first eight week period the students completed specific objectives for their clinical placement in the preschool or elementary school.

While in each of the two clinical placements, students were observed by the course professors. The students were evaluated on the second clinical placement by the supervising occupational therapist as well as by the pediatric faculty members.

During the 3-month course, the students were given two examinations to evaluate their problem solving and resource acquiring abilities as well as their skill in treatment planning and implementation. The final examination required students to be competent

in reading the literature, evaluating resources, and using resources to plan and implement unique treatments for children and youth.

All assessments of students except the midterm examination were completed at the end of the 3-month period. The midterm and final examinations was completed as take home exams.

Two changes were made in the original course during the three month period. Tutorials were initially planned to be completed in groups of six with a faculty tutor. Once the course started the students requested that the entire group of 12 work together and split into smaller groups as the tasks required. The other change was that a 2 hour class period was added during the final 4 week segment so the students could gather and discuss issues concerning their clinical placements. This was added at the request of the students and gave them an opportunity to discuss issues in more depth with the entire class. Both changes were evaluated at the end of the three months. The faculty and students all felt that these changes were worthwhile and they will become part of the course design.

Chapter 5: Results

Results

The problem to be solved in this practicum was that master's level occupational therapy students demonstrated dependence upon their professors and clinical instructors to provide them with solutions for problems they encountered when working with children and youth. Because the field of occupational therapy is expanding so rapidly, occupational therapy students often have difficulty acquiring and integrating the vast amount of information needed to work with children and youth as it is provided in traditional pediatric courses. Students taught in the conventional manner are frequently not encouraged to solve problems by seeking knowledge independently and they have difficulty relating information learned in classes to clinical practice.

To address this problem, a course was designed and taught by this writer to teach master's level occupational therapy students how to strategically problem solve when providing services to children and youth. This course was structured to use a student-centered approach which incorporated some problem-based learning methods. The course used case studies as a primary teaching tool in order to relate the class material more closely to what would be experienced in the clinic. Occupational therapy students were instrumental in planning and implementing several of the learning/ teaching experiences during the class. The class emphasized the development of clinical reasoning skills. Clinical practice experiences were provided and students were involved with children with disabilities and their families at a minimum of two fieldwork sites during the 3-month course.

Student evaluations were based on the students' ability to reason, to find and use appropriate resources, and to problem solve rather than on memorization of facts. Opportunities for students to become more reflective in their practice were provided through the use of a journal.

The goal of this practicum was that students completing the pediatric occupational therapy treatment course would demonstrate appropriate strategies needed to solve the problems of children and youth encountered in clinical practice today as well as in the rapidly changing health care environment.

The following outcomes were projected for this practicum:

1.) Occupational therapy students will appropriately locate resources and use necessary information to treat children and youth with a variety of disabilities in the clinical settings as determined by the pediatric faculty and clinical supervisor.

This outcome was not met.

Eleven of the 12 occupational therapy students were able to appropriately locate resources and use necessary information to treat children and youth with a variety of disabilities in the clinical settings as determined by the pediatric faculty and clinical supervisor. This outcome was measured in two ways.

During the first 8 weeks of the course this was evaluated on a weekly basis by the pediatric faculty members. Students were expected to turn in treatment plans along with supporting information used to complete the case studies presented by the faculty. On their treatment plans students demonstrated that they could appropriately locate resources and use the information needed to plan treatment. Twelve out of 12 students

were successful (overall scores of 80% or above) in this section of the course.

The second measure of this outcome was completed by the clinical supervisor following the last 4 weeks of the course when students were placed in a pediatric clinical practice setting. At the end of this period, clinical fieldwork supervisors rated students on their ability to locate resources and information using the objectives in the Data Gathering/Observational Skills section of the Wiscouncil Level I Fieldwork Evaluation Form. Eleven out of 12 students scored 80% or above in this area. The one student who did not score 80% or above received 14 of the 16 necessary points to achieve this goal.

2.) Occupational therapy students will be able to determine each child's unique problems and use this information to develop and implement appropriate solutions or strategies for treatment as determined by the pediatric faculty and clinical supervisor.

This outcome was not met.

Ten of the 12 occupational therapy students were able to determine each child's unique problems and use this information to develop and implement appropriate solutions or strategies for treatment as determined by the pediatric faculty and clinical supervisor. This outcome was measured in two ways.

This outcome was evaluated by the pediatric faculty members on a weekly basis while the students were in the didactic portion (first 8 weeks) of the course. Students turned in treatment plans for the cases studies presented by the faculty where they demonstrated that they could determine each child's unique problems and plan appropriate strategies for treatment for the child and the family. Twelve out of 12 students were successful (overall scores of 80% or above) in this section of the course.

Following the 4 week clinical fieldwork part of the course (last 4 weeks), clinical fieldwork supervisors rated students on their ability to develop and implement appropriate treatment using the objectives in the Program Planning/ Implementation section of the Wiscouncil Level I Fieldwork Evaluation Form. Ten out of 12 students scored 80% or above in this area. The two students who did not receive the necessary 20 points to be at 80% scored 18 and 19 points respectively.

3.) Occupational therapy students will assist in determining their own learning needs and will develop strategies to meet those needs during the therapeutic treatment course as determined by self assessment, peer assessment and pediatric faculty assessment.

This outcome was met.

Twelve out of 12 occupational therapy students assisted in determining their own learning needs and helped develop strategies to meet those needs during the therapeutic treatment course as determined by self assessment, peer assessment and pediatric faculty assessment. Students determined some of their own learning issues during the course by selecting topics for further investigation or and by selecting some of their laboratory experiences. The students as a group determined what they needed to learn in order to successfully understand the material in the case studies and then divided the tasks of locating the needed information. Students were responsible for sharing the information gained with the class and relating the information to pediatric treatment.

To determine the effectiveness of each student in this area the Faculty, Peer and Self Assessment Form was used. Twelve out of 12 students received a score of seven or

above on each item on this form when scored by themselves, six of their peers and the pediatric faculty members. Combined mean scores from the students' peers were given to each student so they could compare their self assessment with their peers assessment of their abilities. Faculty members individually scored each student using this form.

When beginning the 4 week clinical placement, it was suggested that students present a list of their learning needs to their clinical supervisor so that they could help determine what they would like to accomplish during the placement. This was then discussed with the clinical supervisor. This was not a requirement and was not done by all of the students.

4.) Occupational therapy students will express an adequate level of confidence when treating children and youth following the pediatric treatment course as determined by self evaluation and self report.

This outcome was met.

Twelve out of 12 occupational therapy students expressed an adequate level of confidence regarding their ability to treat children and youth following the pediatric treatment course as determined by self evaluation and self report. All students reported a level of confidence of 70% or above when asked to rate themselves on this section of the Faculty, Peer, and Self Assessment Form. All students scored themselves between 70% and 95% on this measure. Pediatric faculty members asked the student to orally comment on the level of confidence they felt in treating children and youth in an individual informal interview following the final exam. All students either confirmed or raised the confidence level reported on the Faculty, Peer and Self Assessment Form

during this interview.

5.) Occupational therapy students will pass the midterm and final examinations as determined by the pediatric faculty and by student self-assessment.

This outcome was met.

Twelve out of 12 occupational therapy students passed the midterm and final examinations as determined by the pediatric faculty members and by student self-assessment with a score of 70% or above. Exams were scored by both pediatric faculty members and a letter grade was awarded. Students were given the opportunity to question the scores received on specific examination sections by presenting in writing the reasons why they felt their answer deserved more credit. Students were given the option of rewriting sections of the midterm test if deemed appropriate by the faculty and student.

Both the midterm and the final were modified essay examinations that included case studies. The student was expected to define the problems, determine the resources needed to address the problems and use those resources in order to provide a child or teenager with an appropriate treatment program using correct intervention strategies.

Discussion

The students expressed mixed reactions to the change in class format, but for the most part this class has been positively received. Some students reflected in their journals that they felt they were making themselves work harder than the instructor would have made them work, some felt they were not getting the quantity of information they would in a traditional class and some felt that they were learning in a way that they

would remember the material when the class was over. Written comments made by students after the course was completed included: "although self-directed and group learning is very different than what I was used to, I found that this type of learning is much more rewarding. The fact of the matter is that once I am a clinician I will be forced to find my own answers rather that rely on another person to answer my questions or clarify my thoughts"; "case based learning gives the student the opportunity to reason like a clinician, it puts one in the position of the therapist so one has no other choice than to think like a therapist", and "I found the case study format a good, logical way to learn and it was a good way to prepare for the real world". Another student wrote that "the pros of problem-based learning are student growth, confidence in ideas and an increase in professional behavior/attitude. The cons are limited and there are more pros, but some disadvantages are that problem-based learning is time consuming and so some material is left out of the course that needs to be covered." Last, one student wrote that "My initial impressions about problem-based learning were negative because I was confused about the process and had not had any experience with this type of learning. After the 2nd case study, I started to enjoy PBL and the case study format. It required a lot of thought and research on my part but I was very motivated to do it. This type of learning prepared me for my clinical rotation and made real life case studies approachable."

All faculty members involved in teaching the pediatric treatment course agreed that this was a beneficial change in teaching method and would be continued in the future. They also agreed that even though this is a very intense method of teaching (the professor must to be constantly ready for the unexpected) it is also more interesting

because the professors are included in the learning process.

One major change was made in the original course design. It was anticipated before the class began that the students would be divided into two tutorial groups for the case studies and each group would have a different tutor as in done in many problem-based models. After the first week the students decided (and this course is based on students learning to make their own decisions) that they preferred to work as a whole, dividing only as needed to meet the learning objectives. This appeared to be successful and will be continued in future classes.

The students in the class were able to agree on most matters and appeared to enjoy having input into the class design and class decisions. The problems reported in the literature and through personal communication with other professors regarding group dynamics within small groups was not an issue in this class, although it has the potential to be a problem in future classes.

Clinical supervisors have given informal feedback to the pediatric faculty that they feel that our students are better able to work with children and youth than students from some other programs. They have given our students on Fieldwork Level I many of the same responsibilities that other students are not given until they are on Fieldwork Level II. Three clinical supervisors requested that the student they supervised as part of this course return to that facility for a Fieldwork Level II placement.

On the Wiscouncil Level I Fieldwork Evaluation form, comments from clinical supervisors included: the student "asks appropriate questions and is always interested in why specific treatment is being done. She has good analytical skills"; "she is a self-

starter", and the student "took initiative in areas that she felt she needed more information". Other comments by supervisors were: the student "demonstrates excellent observational and problem-solving skills"; "she has been very active in seeking additional information/education and independently researched questions"; "she was able to pin-point needs and strengths of patients and able to identify specific developmental needs"; she "initiated her own learning by utilizing department resources", and " he exhausts all resources to obtain pertinent information and is effective in identifying and analyzing treatment problems".

At the onset of the course none of the 12 students felt that they would work in pediatrics. Seven were unsure because of lack of experience, 3 were fairly certain that this would not be their area of interest and 2 were very certain they would not work in the area. None had requested Fieldwork Level II placements in a pediatric clinical setting. Following the course, seven students requested changing their Fieldwork Level II experience to one in pediatrics. The Fieldwork Level II experience is a three month clinical experience following the end of all didactic course work in the occupational therapy curriculum. Two Level II placements are required by the American Occupation Therapy Association in order to take the Certification Examination in Occupational Therapy.

Levels of confidence that students felt in treating children with disabilities were recorded at three different times during the course. They were asked to state their level of confidence at the beginning of the course, after the first 8 week didactic portion and again following the 12 week session. The levels went from 1-10% when the course

began, to 45-80% at 8 weeks, to 70-95% at 12 weeks. At the end of the 12 weeks 10 of the 12 students felt 80-95% confident.

Recommendations

It is the recommendation of this writer that this approach to teaching be considered for treatment courses in occupational therapy and other allied health professions. Because problem-based learning courses can be designed in many different ways, it is suggested that this method be modified to meet the needs of the specific program. For many courses, problem-based learning methods can be used in combination with other methods. For the pediatric occupational therapy treatment course developed for this practicum, it was found that weekly group discussions, selected lectures and skill-based laboratories were important. These were prepared for the students as well as specific objectives for their participation in case studies, tutorials, and clinical experiences.

Within the occupational therapy program there are four treatment courses, two of which use problem-based teaching methods and two that do not. It would be beneficial to analyze the four treatment courses and the methods used for teaching them to determine if there is any difference in their effectiveness. The two problem-based courses could be contrasted with the two traditionally taught courses to decide if one teaching method better meets the students needs at this point in their course of study. It is this writers belief that a combination of the two approaches is best.

Information needs to be gained from students once they finish the four treatment

courses and a questionnaire can be used to so this. Also, information should be sought from the students who participated in these courses one year following their graduation to see which teaching methods were advantageous to them in their clinical work and in their ability to be successful on their first job.

Dissemination

There has been a great deal of interest in this practicum from other professionals at the writer's work place as well as from other occupational therapy programs. Two weeks prior to the pediatric treatment course starting one of the other professors decided to use problem-based learning methods in her treatment course as well. She used the format designed for the pediatrics course for her course in physical disabilities. Though both courses used a similar format, the courses ended up to be quite different. The physical disabilities course was much more structured and used two distinct groups with different tutors for the tutorials. This professor is currently planning a workshop to train tutors for problem-based learning classes.

The design of this problem-based treatment course was presented at the Great Southern Conference for Occupational Therapists in October 1995 and was positively received by other occupational therapy professionals. The results of this method of teaching pediatrics and the outcomes which were found will be prepared as a presentation and as a paper. They will be submitted to a national journal for occupational therapists and to a national conference for occupational therapists in the next year.

References

Albanese, M. A. & Mitchell, S. (1993). Problem-based learning: A review of literature on its outcomes and implementation issues. Academic Medicine, 68, 52-81.

Armstrong, E. G. (1991). A hybrid model of problem-based learning. In Boud, D., & Feletti, G. (Eds.), The challenge of problem-based learning (pp. 137-149). London: Kogan Page.

Barrows, H. S., & Tamblyn, R. M. (1980). Problem-based learning: An approach to medical education (Vol. 1). New York: Springer Publishing Company.

Barrows, H. S. (1985). How to design a problem-based curriculum for the preclinical years. New York: Springer Publishing Company.

Barrows, H. S. (1986). A taxonomy of problem-based learning methods. Medical Education, 20, 481-486.

Barrows, H. S. (1992). The tutorial process. Springfield, IL: Southern Illinois University School of Medicine.

Barrows, H. S. (1994). Practice-based learning: Problem-based learning applied to medical education. Springfield, IL: Southern Illinois University School of Medicine.

Benor, D. E. (1984). An alternative, nonbrunerian approach to problem-based leaning. In Schmidt, H. G., & de Volder, M. L. (Eds.), Tutorials in problem-based learning, (pp. 48-58). Maastricht, The Netherlands: Van Gorcum, Assoc.

Boud, D., & Feletti, G. (1991). Introduction. In Boud, D., & Feletti, G. (Eds.), The challenge of problem-based learning (pp. 13-22). London: Kogan Page.

Brown, S. Wiscouncil Level I Fieldwork Evaluation Form. (Available from Suzanne Brown, MS, OTR, Coordinator of Level I Wiscouncil Project, Concordia University, 1200 North Lake Shore Drive, Mequon, Wisconsin, 53097).

Brown, S., Streeter, L., Stoffel, V., & McPherson, J. (1989). Development of a Level I Fieldwork Evaluation. American Journal of Occupational Therapy, 43 (10), 677-682.

Bruhn, J. G. (1992). Problem-based learning: An approach toward reforming allied health education. Journal of Allied Health, Summer, 161-173.

Candy, P. C. (1991). Self-direction for lifelong learning. San Francisco: Jossey-Bass Inc. Publishers.

Cohn, E. (1991). Clinical reasoning: Explicating complexity. The American Journal of Occupational Therapy, 45, 969-971.

Combs, A. W. (1972). Fostering self-direction. In Talbert, E., & Frase, L. (Eds.), Individualized instruction: A book of readings (pp. 59-73). Columbus: Merrill Publishers.

Daines, J., Daines, C., & Graham, B. (1993). Adult learning, adult teaching. Nottingham, England: University of Nottingham.

Engel, C. E. (1991). Not just a method but a way of learning. In Boud, D., & Feletti, G. (Eds.), The challenge of problem-based learning (pp. 23-33). London: Kogan Page.

Foster, S., & Gilbert, A. (1991). Experiences with problem-based learning in management and economics. In Boud, D., & Feletti, G. (Eds.), The challenge of problem-based learning (pp. 234-241). London: Kogan Page.

Love-Kitchin, J. (1991). Problem-based learning in optometry. In Boud, D., & Feletti, G. (Eds.), The challenge of problem-based learning (pp. 194-201). London: Kogan Page.

MacDonald, P. J. (1991). Selection of health problems for a problem-based curriculum. In Boud, D., & Feletti, G. (Eds.), The challenge of problem-based learning (pp. 101- 109). London: Kogan Page.

Mattingly, C., & Fleming, M. (1994). Clinical reasoning: Forms of inquiry in a therapeutic practice. Philadelphia: F. A. Davis Company.

Neame, R. L. B. (1981). How to construct a problem-based course. Medical Teacher (Vol. 3, pp. 94-99).

Newble, D. I., & Clarke, R. M. (1986). The approaches to learning of students in a traditional and in an innovative problem-based medical school. Medical Education, 20, 267-273.

Norman, G. R. (1991). What should be assessed? In Boud, D., & Feletti, G. (Eds.), The challenge of problem-based learning (pp. 254-259). London: Kogan Page.

Ross, B. (1991). Towards a framework for problem-based curricula. In Boud, D., & Feletti, G. (Eds.), The challenge of problem-based learning (pp. 34-41). London: Kogan Page.

Royeen, C. B. (1994, Winter). Problem-based learning in action: Key points for practical use. Education Special Interest Section Newsletter for Occupational Therapy, 4 (4), 1-2.

Royeen, C. B. (1995). A problem-based learning curriculum for occupational therapy education. The American Journal of Occupational Therapy, 49, 338-349.

Ryan, G., & Little, P. (1991). Innovation in a nursing curriculum: A process of change. In Boud, D., & Feletti, G. (Eds.), The challenge of problem-based learning (pp. 111-121). London: Kogan Page.

Sadlo, G., Piper, D. W., & Agnew, P. (1994). Problem-based learning in the development of an occupational therapy curriculum, part 1: The process of problem-based learning. British Journal of Occupational Therapy, 57(2), 49-54.

Schon, D. A. (1987). Educating the reflective practitioner: Toward a new design for teaching and learning in the professions. San Francisco: Jossey-Bass.

Sternberg, R. J. (1990, January). Thinking styles: Keys to understanding student performance. Phi Delta Kappan, 366-371.

Swanson, D. B., Case, S. M., & Vleuten, C. P. M. van der (1991). Strategies for student assessment. In Boud, D., & Feletti, G. (Eds.), The challenge of problem-based learning (pp. 260-271). London: Kogan Page.

VanLeit, B. (1994, Winter). Problem-based learning: A strategy for teaching undergraduate occupational therapy students. Education Special Interest Section Newsletter for Occupational Therapy 4 (4), 2-3.

VanLeit, B. (1995). Using the case method to develop clinical reasoning skills in problem-based learning. The American Journal of Occupational Therapy, 49, 349-353.

Appendix A

Faculty, Peer and Self Assessment Form

Faculty, Peer and Self Assessment Form

Name of person being assessed_____

Evaluator's Name_____

Criteria:

1. Degree of respect for and responsibility to the group.
   - Did you/they attend and participate in all group sessions?
   - Were you/they prompt in attendance?
   - Did you/they follow through on assignments made by the group?
   - Were you/they flexible and available for scheduling of additional group sessions when needed?
   - Did you/they listen to and facilitate other points of view?

Strongly Disagree			Disagree		Neutral		Agree		Strongly Agree
1	2	3	4	5	6	7	8	9	10

2. Contribution to the group process.
   - Did you/they make positive contributions to the group process?
   - Did you/they encourage others to participate?
   - Did you/ they help keep the group on task and focused?
   - Did you/they facilitate group problem solving?

Strongly Disagree			Disagree		Neutral		Agree		Strongly Agree
1	2	3	4	5	6	7	8	9	10

3. Ability to determine learning needs.
   - Did you/they contribute to defining the learning issues?
   - Were you/they able to determine what needed to be learned in order to facilitate solving the problem?

Strongly Disagree			Disagree		Neutral		Agree		Strongly Agree
1	2	3	4	5	6	7	8	9	10

4. Ability to find resources and contribute information to the group.
   Was the information you/they contributed relative to the problem?
   Were you/they able to find appropriate and contemporary resources?
   Did you/they seek a variety of resources?

Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
1	2	3	4	5	6	7	8	9	10

5. Ability to critically analyze and synthesize information.
   Could you/they critically review information for accuracy and pertinence?
   Could you/they explain difficult information to the group?

Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
1	2	3	4	5	6	7	8	9	10

Comments:

SELF ASSESSMENT ONLY: Circle the percentage that best represents your level of confidence.

I feel confident in my ability to plan and implement appropriate treatment for children and youth with disabilities.

10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Form compiled by Carol Reed, MS, OTR and Lori Andersen, MS, OTR